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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/147,398 04/02/99 KAULE

W JEK-KAULE *WC*

EXAMINER

QM12/0801

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ART UNIT

PAPER NUMBER

3722

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
**09/147,398**

Applicant(s)  
**Kaule et al.**

Examiner  
**Erica Ergenbright**

Group Art Unit  
**3722**



☒ Responsive to communication(s) filed on Apr 2, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-35 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-35 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on Apr 2, 1999 is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☒ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## **DETAILED ACTION**

### ***Faxing of Responses to Office Actions***

1. In order to reduce pendency and avoid potential delays, TC 3700 is encouraging FAXing of responses to Office Actions directly into the Group at (703) 305-3579. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into TC 3700 will be promptly forwarded to the examiner.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "laser beam" of claims 15 and 32, the "step of "several plates" being engraved simultaneously of claim 19, and the step of one plate being engraved with "several tools simultaneously" of claim 20 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

### ***Specification***

3. The disclosure is objected to because of the following informalities: the specification refers to the claims on pages 1 and 2. The specification must be amended to include the referenced subject matter from these claims that is necessary to the understanding of the invention.

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Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-35 are replete with instances that do not particularly point out and distinctly claim the subject matter of applicant's invention. Examples of these instances are listed below, but these instances are not limited to the listed examples. Applicant is advised to closely review the claims for other occurrences.

Claim 1, lines 1-2, states "an embossing plate, in particular a steel intaglio printing plate". If a steel intaglio printing plate were a type of embossing plate, this would be a narrow limitation ("steel intaglio printing plate") within a broad limitation ("an embossing plate"), which is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by

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such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). However, an intaglio printing plate is *not* an embossing plate, and it is therefore unclear what applicant intends to claim. From the drawings, it appears that applicant's invention is related to the art of intaglio plate making. Applicant also claims a narrow limitation within a broad limitation in claim 23 ("An engraved object, in particular a plate").

Regarding claim 23, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

There are several positively recited limitations that lack sufficient antecedent bases in the claims. Examples of these are: "the surface" in claims 1, 8, 9, 23, 24; "the at least one line" in claim 1; "the edge" in claim 1; "the at least one partial area" in claim 1; "the penetration depth" in claim 1; "the engraving tool" in claim 1; "the material" in claim 1; "the predetermined desired depth" in claim 1; "the graver" in claim 6; "the base" in claim 10; "at least one further engraving step" in claims 21 and 22, "the first engraving step" in claim 21; "the depression" in claims 23 and 24; "the object" in claim 24; "the direction" in claim 26;

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In claim 1, lines 2-3, there is no structure to support the function of bringing a line into the surface of the embossing plate. It is also unclear in the last two lines of claim 1 which "depth" is being referred to (the desired depth of the tool track, or the penetration depth of the tool).

Regarding claims 23-35, applicant claims a "substructure". The only place in the specification that references a substructure is on page 9, reference element 30. The specification is silent as to how this substructure 30 is formed, except that it is done in "an additional operation" (page 9) of some sort, and the specification is silent as to the shape of the substructure 30. Therefore, if the substructure 30 is the substructure that is being claimed, there is no support in the specification for claims 26-28 and 30-33. However, as set forth in the claims, it appears to the examiner that the claimed substructure may in fact be the tool track, in which case the claim language should be amended to be consistent with the specification language.

Regarding claim 29, the phrase "or the like", and regarding claim 35, the phrase "and the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claims 34 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the

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steps. See MPEP § 2172.01. The omitted steps are: any step to define the “use of the engraved object” as set forth in the preambles of these claims.

In claim 34, it is unclear how the “engraved object”, of which “embossing or printing plates” is a subset, can be used to produce the “embossing or printing plates”.

*Claim Rejections - 35 USC § 102/103*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 23-35, as best understood, are rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 2,210,923 (Jacquero et al) or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 2,210,923 (Jacquero et al.) in view of U.S. Patent No. 4,972,323 (Cauwet). The limitations in claims 23 and 24 that state “brought into the surface by engraving”, and the limitations in claims 32 and 33 that also define how structure is “brought in” make it appear that the claims 23-35 are product-by-process claims.

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“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by using a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Also see MPEP § 2113.

Jacquerod et al. teaches an intaglio printing plate 10 (page 2, left column, lines 38-42 and Figure 1) which has a depression 11 in the shape of a “one” which constitutes a line, which depression is shown in Figures 1-3 as having flanks and a bottom. Jacquerod et al. also teaches that the printing plate 10 has substructures 11a at least in the bottom of the depression representing “additional information” similar to that of the present invention, where the width of each of the substructures is smaller than the depression 11 width (see Figures 1-3). The substructures 11a define a roughness, as shown in Figure 2. Specifically regarding claim 29, the layout of the substructures 11a could be considered to be a “pattern”. Specifically regarding claim 30, the substructures 11a could be “read” by a machine such as a camera or a scanner. Specifically regarding claim 31, the substructures as shown in Figures 1-3 could be considered to be grooves. Specifically regarding claims 34 and 35, as previously stated, there are no method steps provided. However, the printing plate 10 is described as being inked and re-inked (page 2, left



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column), so presumably, the printing plate is going to be used for printing, and could thus be used to print whatever was desired or expedient, including "papers of value, ... and the like". Regarding the lines brought in by engraving, or the substructure being brought in with a laser beam or a mechanical chisel, the lines and the substructure could have been brought in via engraving, a laser, or a chisel. Regarding claims 26 and 27, a line could be drawn that connects the substructures, which line could be parallel to at least one of the depression flanks, and which could also be drawn in a meandering fashion.

Regarding the way that the lines and the substructure were brought in, in the alternative, Cauwet teaches that it is known to use a "milling cutter, engraving chisel, laser emitter, electro-erosion tool, etc." (column 2, lines 50-55) in an automatic engraver (column 1, lines 14-18) such that the tool chosen is suitable to the material being engraved (column 1, lines 14-18 and column 2, lines 50-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have created the lines and substructures taught by Jacquerod et al. via engraving with a laser or a mechanical chisel, as taught by Cauwet, as these are known methods of material removal/engraving.

9. ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-3, 5-11, 14, and 16-20, as best understood, are rejected under 35

U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,949,270 (Shima et al.).

Shima et al. teaches a device for and method of machining a pocket of a desired contour into a surface (column 1, lines 58-68, and column 2, lines 1-4), which constitutes a similar problem solving area to the instant invention. Shima teaches performing such machining at a predetermined depth of cut (column 1, lines 13-15). Shima teaches the use of a tool path 4 that is "intersection-free" as well as at least partially "contour-parallel" to the desired contour 1 (see Figure 16), and which tool path only requires one traverse of the tool (see Figure 16). Shima also teaches that it is known to use a tool path that removes residual area with a second tool track (Figure 13c) which removes material ~~either~~ in tracks which are "contour-parallel" to the desired contour (Figure 13c).

Alternatively, any time the tool "turns", it could be said to create a new tool path (i.e., the second tool track as claimed in claim 7). For example, in Figure 13b, the tool path starts at the top going from right to left, which could constitute a first track, and then it proceeds to turn and move from top to bottom, which could constitute a second tool track. Shima also teaches that it is known to use a "meander" shaped tool path (see Figure 13b). Specifically regarding claims 10 and 11, when material is removed, a new surface having a roughness will be formed, and when the material is removed via a tool having any of the

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paths taught by Shima, the new surface will have grooves of one size or another. Specifically regarding claim 14, the desired contour is defined with the aid of a data processing system (column 2, lines 30-46). Specifically regarding claim 18, tools of different kinds or dimensions can be used, or it would not be necessary to define the tool shape and diameter as described in column 3, lines 49-52. Shima et al. does not specifically teach that the method of cutting is used for an embossing plate, nor that several workpieces are machined simultaneously, nor that one workpiece is machined with several tools simultaneously, nor that the machining is performed with a rotating tool. However, the machining method taught by Shima et al. can be used to machine a pocket of a desired contour into any workpiece having an accessible surface. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the method of the present invention to machine a desired contour into a printing plate, since a printing plate is a workpiece with an accessible surface. Regarding the multiple workpieces or multiple tools, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized multiple workpieces or multiple tools, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Regarding the rotating tool, pocket machining or "end face finishing" (column 3, lines 25-30) requires a rotating tool in order to produce the quality of finish that characterizes a "finishing" operation.

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12. Claims 4, 12, 13, 15 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,949,270 (Shima et al.) as applied to claim 1 above, and further in view of U.S. Patent No. 4,972,323 (Cauwet). Shima et al. teaches the aspects of the invention as claimed in claims 4, 12, 13, and 15 as set forth in the above rejection based thereon. Regarding claim 13, Shima additionally teaches the cutting of "humanly recognizable" shapes or images (see Figure 16, for example). However, Shima et al. does not teach varying the depth of cut, nor using a laser engraving tool. Cauwet teaches the use of an engraving tool having three axes of movement (column 1, lines 22-25) to vary the depth of cut (column 14, lines 3-17) and to set multiple tooling passes ("one or more further engraving steps" as claimed in claim 12) (see column 14, lines 34-36) in a flat plate workpiece (column 2, lines 5-6). Cauwet also teaches that the engraving tool can be a milling cutter or laser, with the specific type of engraving tool used being dependent on the material of workpiece used (column 2, lines 50-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have varied the depth of cut, as taught by Cauwet, in the cutting process taught by Shima et al. for the purpose of being able to engrave images of a higher complexity (Cauwet, column 2, lines 15-20) into the flat workpiece taught by Shima et al. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized a laser engraving tool, as taught by Cauwet, to engrave a workpiece with the engraving method taught by Shima et al, for the purpose of being able to engrave

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workpieces made of materials that are not suitable for engraving with a rotary engraver (Cauwet, column 2, lines 50-55).

13. Claims 21 and 22, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,949,270 (Shima et al.) as applied to claim 12 above, and further in view of U.S. Patent No. 4,972,323 (Cauwet) as applied to claim above, and further in view of U.S. Patent No. 2,210,923 (Jacquerod et al.). Shima et al. in view of Cauwet teaches all aspects of the invention as claimed in claims 21 and 22 as set forth in the above rejection of claim 12 based thereon, but does not teach different precisions of engraving tools. Jacquerod et al. teaches an flat intaglio printing plate that has a large removed area 11 in a surface of the plate 10 in a desired shape contour. Jacquerod also teaches finer removed areas 11a, which as shown in Figure 3, appear to be on sloping flanks of the desired contour. At the time that Jacquerod's invention was made (patented 1940), the available technology to engrave the finer removed areas 11a was not practical (page 1, left column, lines 9-24). However, with the technology set forth in Shima et al. in view of Cauwet, the technology to engrave these finer areas with a smaller tool than was used to engrave the larger contour was practical at the time the present invention was made. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the intaglio printing plate with removed areas of differing precision taught by Jacquerod et al. for the flat workpiece taught by Shima et al. in view of Cauwet, and thus to have used the cutting

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methods and tools taught by Shima et al. in view of Cauwet to machine the areas of differing precision in order to be able to quickly and precisely remove the desired area from the intaglio printing plate.

***Prior Art References***

14. The prior art references listed in the attached PTO-892, but not used in a rejection of the claims, are cited for their similarity to the present invention. U.S. Patent No. 5,112,171 teaches milling gravure cylinders with a roughness similar to that of the present invention. U.S. Patent No. 4,830,552 teaches the use of multiple engraving tools to engrave an intaglio printing cylinder. U.S. Patent No.'s 5,435,247, 5,164,285, 4,152,986, 2,638,050, and 1,719,621 all teach printing devices similar to those of the present invention. U.S. patent No. 5,435,247 additionally teaches printing bank notes. U.S. Patent No.'s 4,521,860, 5,246,319, 5,609,448, 5,223,777, 5,595,463, 4,850,761, 6,077,002, and 4,621,959, and 3,915,061, and Japanese Patent Publication 8-282195 all teach methods similar to those of the present invention.

***Contact Information***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica Ergenbright whose telephone number is (703) 308-6395. The examiner can normally be reached on Monday through Thursday from 7:30 a.m. to 5:00 p.m, and every other Friday from 7:30 a.m. to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington

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can be reached at (703) 308-2159. The fax number for TC 3700 is (703) 305-3579. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 3700 receptionist whose telephone number is (703) 308-1148.

ee

*EE*  
July 27, 2000

*A. L. Wellington*  
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TECHNOLOGY CENTER 3700